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ABSTRACT

A common concern of state-level and postsecondary institutional decisionmaking is the limitations of the state planning and budgeting process as it relates to educational change and accountability: increased regulations, the cost of obtaining information, the difficulty of assessing outcomes, the inability to discourage nonproductive programs, and lack of information about benefits to the taxpayer. Interest in performance- or outcome-oriented budgeting is increasing, and a number of states now have performance audit staffs. A variety of techniques are used by these staffs: outside consultants, institutional assessments, and combined audit and program review. NCHEMS has developed an Inventory of Higher Education Outcome Variables and Measures to be used by decisionmakers in dealing with this problem. The most needed outcome measures were determined from two surveys of state-level and institutional administrators. Four major difficulties occur in collecting and using outcome information: (1) explicit measures of educational outcome have been hard to come by; (2) interpretation of information (to determine cause and effect) is difficult; (3) general goals often lack translation into specific objectives; and (4) the usual time span of a budget limits the assessment of higher education outcomes. (Author/MSE)

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INTRODUCING HIGHER EDUCATION OUTCOME INFORMATION INTO THE STATE PLANNING AND BUDGETING PROCESS

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Introducing Higher Education Outcome Information

Into the State Planning and Budgeting Process

Over the last several years, I have engaged in a number of discussions with state-level and postsecondary institutional decisionmakers about the problems associated with the state planning and budgetary process. The discussions generally have started with a focus on our troubled inflationary economy, energy and conservation problems, the influx of state agencies competing for the state tax dollar, and the consequences of a decline or leveling off of college enrollments. Sooner or later, however, the discussions have zeroed in on the problems and limitations of the state planning and budgetary process and its impact on change, innovation, and accountability in postsecondary education. For example, college administrators and faculty have expressed a growing concern about the increased regulations and controls being placed on the institutions by the budget process. They have expressed equal concern about what they feel are inappropriate and unreasonable demands from a wide range of state agencies for budget-related information that is costly to obtain. They also have indicated great frustrations about their inability to do an effective job of telling their institution's story in terms of the intended and actual outcomes (i.e., impacts, effectiveness, and products) resulting from the institution's programs. State-level officials and staff, on the other hand, have registered major concerns and complaints about the inability of the budget process's inability to discourage the They have expressed concern about the process' inability to discourage the perpetration by higher education and other social agencies of outmoded and non-productive programs. Finally, they have continually pointed out the lack of

good information about the returns of benefits citizens in the state will get or are getting from the tax dollars invested in postsecondary education.

Ultimately, the discussions with both state-level and college officials have ended with an expressed need for a more effective system for planning and budgeting. From the institutional point of view, this expression of need has been qualified by the need for a system that recognizes the unique mission, objectives, and achievements of each individual institution and program, is cognizant of the "state of the art" with respect to the identification, measurement, and evaluation of educational outcomes, and considers the costs for obtaining outcome information. From the state-level point of view, the call for a more effective planning and budgeting system has been accompanied by demands for a system that links the resources used to the results produced, cuts out waste and inefficiency, and encourages a higher quality of education without having to always increase the costs (Folger 1975).

Central to the requests from both groups is an emphasis on incorporating information about the intended and actual outcomes or performances of an institution and its programs into the state-level planning and budgeting process. How might such a performance- or outcome-oriented planning and budget process be developed and implemented? Who should be involved? What are the implications or consequences of such a process for institutions and states? From my vantage point, one of the major goals of this seminar is to begin getting a better grasp of the answers to these questions. With this in mind, the purpose of the remainder of this paper is to provide some background with respect to these questions. I will: (1) provide a brief overview of some of the current practices with respect to

collecting higher education outcome information for use at the state level, (2) suggest some of the different kinds of outcome information valued at the state level, and (3) highlight some of the problems and issues that are likely to be encountered in moving in this direction.

Current Practices

As a result of the pressures mentioned above, state legislatures and state executive offices have increased their interest in and demand for better information about the performance and effectiveness of tax-supported programs. For example, Mark Chadwin, who is Director of the Illinois Economic and Fiscal Commission, has stated that, "In 1970, no state legislature had a full-time staff responsible for evaluation of program effectiveness. Now, over a dozen have committees, commissions, or auditor's offices functioning in this area, and more such bodies seem to appear almost monthly" (1975:45). Lyman Glenny, in his recent study on state budgeting for higher education, reported that, of the 17 states studied, "14 have separate executive or legislative staffs that perform policy-oriented performance or evaluation audits, as distinct from routine fiscal audits" (1975:15-16). He also pointed out that performance audits of higher education institutions have been made by these separate audit staffs and the role these staffs will play in budgeting for higher education will probably grow in importance.

Exactly what these audit staffs do is described in various ways. In some places, these program evaluation activities are referred to as "program auditing." In others, they are called "program review," "performance post-auditing," "legislative oversights," or "effectiveness auditing." However, no matter what the terminology,

the intent is the same: to measure the performance of programs in terms of actual results and impacts. As this implies, the specification of quantifiable objectives and the collection of data about the indicators linked to those objectives are activities central to these approaches.

Attempts to implement these approaches to measuring institutional performance at the state level range considerably with respect to:

1. Who is responsible,
2. What techniques are used, and
3. How programs are selected for review.

Who is responsible? In some states, such as in Virginia, Wisconsin, Hawaii, and Montana, numerous program evaluation activities are conducted by the legislative auditor's office.* In other states, such as in Illinois, New York, and Florida, the state higher education board staff play major roles in program evaluation and review. Evidence of this trend is the addition of new staff who have management science, program evaluation, and statistical analysis skills. In Nebraska, program evaluation teams are being given responsibility for, what is referred to as, "program post auditing." These evaluation teams, which are composed of persons from the institution, the lay community, and, in some instances, the state legislature, judge the efficacy of selected departments based on criteria linked to the stated goals of those departments.

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*The extent to which these offices are independent from the legislature varies greatly. However, the trend, which is encouraged by the General Accounting Office (GAO) guidelines and the accounting profession, is toward greater autonomy (Chadwin, 1975:45)

What techniques are used? In New York, Florida, and New Jersey, outside consultants are brought in to conduct intensive reviews of selected programs (e.g., high cost graduate programs). According to Berdahl (1975:23), the use of external consultants has considerable merit, but it definitely adds to the cost of evaluation. He cited, for example, that in a recent New York doctoral program evaluation, which employed outside consultants, the budget was estimated to be $59,000.

In some states, such as Hawaii, Washington, and Illinois, program evaluation places major emphasis on performance indicators collected from the institutions. State agencies in Hawaii, for example, have identified a select number of performance measures against which institutions can be audited and evaluated through "a variance reporting procedure" (Meisinger, Purves, and Schmidtlein, 1975:98). However, difficulties in actually gathering this information for use in budget requests have prevented the procedure from being totally implemented.

In Wisconsin, the University system employs an approach for measuring the performance of academic programs that includes both a program audit and a program review. Three basic organizing principles are used in implementing this approach (Smith, 1975). First, it is important that the audit and review rest with the institution. Second, it is important to distinguish between "program audit as a process of identifying programs which for any of several reasons should be given intensive review and program review as the comprehensive and intensive examination of a particular program." The third organizing principle is that

the process of audit and review should be an integral part of mid- and long-range planning, rather than a reaction to crisis situations.

How are programs selected for review? In several states, program audits of all programs are conducted annually using a limited set of performance indicators such as enrollment trend data, degrees produced, student-faculty ratios, and costs relative to disciplines. These audits are usually employed to monitor major changes in the indicators collected so that programs in potential trouble in terms of efficiency and productivity can be identified for more intensive program review. An alternative to the annual audit of all programs is the use of a program review cycle in which just the programs in a given category are scheduled for intensive review every three or five years. The Florida Board of Regents, for instance, has proposed a program review of programs categorized by academic program clusters on a five-year cycle.

West Virginia uses still another approach for selecting programs for review. Using criteria related to costs, outcomes, priorities, and program quality, each institution is asked to make "forced ratings" about each of their programs. Sixty percent of the programs are to be rated as normal on each of the four variables and twenty percent are to be placed on each side of the normal range. Each institution is then asked to select which program it wishes to have reviewed in depth (reported by Berdahl, 1975).

Berdahl (1975) has noted that potentially there is much peril in using quantitative indicators as the only means for selecting programs for intensive review. In support of this cautionary note, he cited the following:

For a variety of judgmental reasons, administrators or planning committees for a particular institution might ask for more intensive review of a program which had not been selected through the audit process. For example, the anticipated retirement or departure of key faculty members in a given program might create a presumption that review of the program should be undertaken prior to restaffing; or a regularly scheduled site visit by an accreditation team might catalyze an institutional audit and review of a program in conjunction with the preparation of documents for the visitors; or planning studies concerning the minimum staffing which should be maintained for the essential programs of an institution might generate need for review of particular programs; or recommendations from system-wide or institutional task forces on curriculum changes could also generate need for program review.

Outcome Indicators Valued at the State Level

Whether you are interested in measuring institutional performance from a state or an institutional perspective, one of the most difficult tasks is trying to identify what outcomes or performances should be assessed. Not only is it difficult to determine just what are the intended or actual outcomes of an institution or a program, but it is equally difficult trying to reach consensus about which outcomes are the most important to measure. One of the major efforts in the Outcomes of Postsecondary Education Project at the National Center for Higher Education Management Systems (NCHEMS) has been to develop products designed to help institutional and state-level decision makers deal with this problem.

One of the initial products developed in the Outcomes Project to deal with this outcomes identification problem was the Inventory of Higher Education Outcome Variables and Measures (Micek and Wallhaus, 1973). Two major criteria were applied in constructing the Inventory. One was to develop a list of outcome variables or constructs that would serve as many kinds and levels of decision makers as possible. Second, the Inventory was intended to be as comprehensive as possible in that it would cover not only instructional programs but

also major noninstructional areas such as research, community education, and public service. Application of these criteria led to the construction of an inventory with the following general structure:

Figure 1

Outline of Major Categories in NCHEMS
Inventory of Outcome Variables and Measures

1.0 Student Growth and Development

- 1.1.0 Knowledge and Skills Development
  - 1.1.1.00 Knowledge Development
  - 1.1.2.00 Skills Development
  - 1.1.3.00 Knowledge and Skills Attitudes, Values, and Beliefs
- 1.2.0 Social Development
  - 1.2.1.00 Social Skills
  - 1.2.2.00 Social Attitudes, Values, and Beliefs
- 1.3.0 Personal Development
  - 1.3.1.00 Student Health
  - 1.3.2.00 Personal Attitudes, Values, and Beliefs
- 1.4.0 Career Development
  - 1.4.1.00 Career Preparation
  - 1.4.2.00 Career Attitudes, Values, and Beliefs

2.0 Development of New Knowledge and Art Forms

3.0 Community Development and Service

- 3.1.0 Community Development
- 3.2.0 Community Service
- 3.3.0 Longer-Term Community Effects

Within each area of the Inventory, general outcome variables have been defined, together with specific potential measures or indicators of those variables. Thus, for example, such variables as "development of general knowledge," "development of specialized knowledge," and "development of critical thinking and reasoning skills" have been identified with the knowledge and skills development area (Category 1.1.0). Measures that might be used to assess these variables include student scores on various standardized tests, numbers of graduates accepting employment in their major field of study as a percentage of total graduates in that field, and average student and/or former student scores measuring their degree of satisfaction with their ability to apply what they know.*

As the Outcome Project staff worked on the Outcomes Inventory and the problems related to obtaining and using outcome information, a major question of concern was (and continues to be) "What are specific outcomes and associated indicators that are valued and needed by different institutional and state-level decision makers?" It was believed that an answer to this question would provide a better understanding among institutional and state-level officials about what outcomes are commonly endorsed by both groups and those that are of unique interest to persons in each particular group. Second, it was felt that such an understanding might enhance the dialogue between these different parties. Finally, if a set of high priority outcome measures could be identified, then work could begin in identifying and developing procedures for documenting and evaluating those outcomes.

*A complete discussion of the development of the Inventory and its possible use is given in An Introduction to the Identification and Use of Higher Education Outcome Information (Micek and Wallhaus, 1973).

In pursuit of an answer to the question stated above, two studies were conducted to identify the outcome information institutional administrators (including presidents and top-level administrators for academic planning, student affairs, and budget and finance) and state-level officials and staff (including governors, legislators, state budget officers, legislative staff, and state directors of higher education boards or coordinating bodies) need for their decision-making responsibilities concerning higher educational programs.

The survey questionnaire used in the two studies was based on the outcome categories and measures contained in the Outcomes Inventory previously mentioned and was designed to: (1) identify the outcome information areas decision makers feel are most important (see Figure 2), and (2) identify the extent to which decision makers "need to know" and "have access to" specific outcome measures. For example, in Outcome Information Area D, which contains a set of outcome measures related to Student Occupational Career Development, a decision maker had the opportunity of indicating his perceived need (or lack of it) for each of 13 specific measures (see Figure 3).

Various descriptive analyses of the data obtained from the surveys have been conducted and the results of these analyses are available from the Center. Figure 4 presents a list of twenty outcome measures that 60% or more of the respondents in one or more of the groups in the two NCHEMS surveys indicated a "Need To Know." Asterisks have been placed next to those measures receiving a high priority rating by each of the state-level groups surveyed. (In the survey of state-level officials there were 22 outcome measures that were endorsed by 50 percent of one or more groups as being of high priority, i.e., "Need To Know.")

Figure 2

Outcome Information Areas Contained in NCHEMS
Outcome Measures Identification Study

A. Student Knowledge and Skills Development - Information about student understanding, competencies, and attitudes relative to bodies of facts and principles and use of their intellectual and physical abilities.

B. Student Educational Career Development - Information about student attitudes and success concerning certain academic pursuits (e.g., student educational degree aspirations and attainments).

C. Student Educational Satisfaction - Information that indicates the satisfaction of students about the knowledge and skills they have acquired and their progress toward their educational and occupational career objectives.

D. Student Occupational Career Development - Information about student attitudes and success concerning certain occupational goals and their job performance.

E. Student Personal Development - Information about changes in students concerning the growth and maintenance of their personal life (e.g., their ability to adapt to new situations, their self-concept, etc.).

F. Student Social/Cultural Development - Information about student abilities and attitudes in dealing with people and their interest in cultural activities.

G. Community Educational Development - Information about the attitudes and success of nonmatriculating participants concerning the acquisition of knowledge and skills, personal and social development, and occupational career goals and performance.

H. Community Service - Information about the impact of the opportunities and services provided by the institution and received by the community (e.g., agricultural extension services, cultural and recreational opportunities, etc.

I. Community Impact - Information about the impact of an institution's programs and its faculty, staff, and students (current and former) on the financial health, manpower supply, and attitudes of the community (local, state, or national).

J. Development of New Knowledge and Art - Information about new knowledge and art forms, created, applied, and reorganized as a result of an institution's programs and its faculty, staff, and students (current and former).

Figure 3

Student Occupational Career Development Outcome Measures

1. Number and percentage of former students (graduates and nongraduates) surveyed who were employed within a certain time period after leaving the institution.
2. Number and percentage of former students (graduates and nongraduates) surveyed who received the job of their first choice.
3. Average first salary of former students.
4. Distribution of former students (graduates and nongraduates) across income categories within a certain time period after leaving the institution.
5. Former students (graduates and nongraduates) scores on a scale measuring their degree of satisfaction with their job performance.
6. Number of professional occupation awards and citations received per former student surveyed.
7. Number and percentage of former students surveyed who are in management positions within a certain time period after leaving the institution.
8. Number of voluntary/involuntary changes in employment within a given time period per former student surveyed.
9. Number of voluntary/involuntary changes in career field within a given time period per former student surveyed.
10. Average first salary expectations of students.
11. Number and percentage of students who are aspiring to a particular type of occupational career.
12. Number and percentage of students and/or former students surveyed who are seeking certain levels of employment.
13. Number and percentage of former students (graduates and nongraduates) surveyed accepting employment in their major field of study.

Figure 4

Outcome Measures Endorsed by 60% of One or More "OMIS" Survey Groups as "Need To Know"

1. Number of students passing certification or licensing exams (e.g., bar exam, CPA, LPN) on first attempt as a percentage of all students taking the exam.
2. Student scores on tests that indicate their ability to read, write, speak, and/or listen.
3. Number and percentage of students surveyed who have participated in activities that enhance their communication skills (e.g., debate, encounter groups, etc.).
*4. Number and percentage of students surveyed identifying a certain degree, diploma, or certificate as the highest degree planned.
5. Number and percentage of students surveyed who are taking noncredit, independent study, or special courses.
*6. Number of students receiving a degree, diploma, or certificate within a certain time period.
7. Average amount of time it takes a student to earn a degree, diploma, or certificate.
*8. Number of students graduating from the institution after a certain period of time as a percentage of their entering class.
9. Number and percentage of graduates for the year who transferred from another school
*10. Number and percentage of students leaving the institution prior to receiving a degree, diploma, or certificate during a particular academic term or year.
11. Student scores on a scale measuring their degree of satisfaction with their progress in achieving their educational career goals.
12. Student scores on a scale measuring their degree of satisfaction with their progress in achieving their occupational career goals.
*13. Number and percentage of former students (graduates and nongraduates) surveyed who were employed within a certain time period after leaving the institution.
*14. Number and percentage of students surveyed who are aspiring to a particular type of occupational career.
*15. Number and percentage of former students (graduates and nongraduates) surveyed accepting employment in their major field of study.
16. Number of nonmatriculating participants enrolled in instructional programs as a percentage of the total number of persons in those programs.
*17. Number and percentage of graduates of a particular graduating class who are employed in-state versus out-of-state.
18. Community attitudes toward the institution (e.g., attitudes toward the institution's contribution to community social/cultural activities and the institutions impact on the amount of crime in the community.
19. Number of proposals funded for certain purposes (e.g., research versus training) by level of funding as a percentage of all proposals submitted.
*20. Total dollar amount of gifts and/or grants received for certain purposes (e.g., research versus training) as a percentage of total budget within a certain time period.

The results of the outcome measures identification studies do not completely identify all of the outcome information valued by institution and state-level officials. They do indicate, however, that multiple indicators of performance and quality need to be considered in measuring program performance at the state level or at the institutional level. Furthermore, they confirm the fact that persons who have different decisionmaking responsibilities focus on and value certain kinds of outcomes. For instance, in both studies, state-level officials consistently placed high importance on information and measures concerning Community Impact, Community Service, and Student Occupational Career Development outcomes. As a result, it seems crucial for institutional and state-level officials to consider the outcomes that are commonly and uniquely endorsed by each group so effective communication can be carried on about the desired and actual performance of institutions in program planning, budgeting, and evaluation situations.

Problems Related to the Collection and Use of Outcome Information

While most individuals concerned with postsecondary education recognize the need and urgency to use outcome information for purposes of planning and budgeting, they are quick to point out the complexity of the problems associated with identifying and measuring educational outcomes and incorporating this information in the planning and budgeting process.

One major difficulty has been that few explicit measures of program effectiveness have been available. Nor has much yet been done to show the links between resources and activities used and the attainment of desired outcomes even when these outcomes can be quantified. In short, it has been much easier to see what a program has

accomplished in terms of activity or resource measures (e.g., expenditures, student/faculty ratios, enrollment levels) than in terms of educational outcomes.

A second problem often cited is that even when information about outcomes is available, it is difficult to use since the techniques for analyzing and interpreting these data are limited or are not well understood. For example, given all of the variables that potentially affect a particular outcome, it is extremely difficult to determine cause-and-effect relationships. A further complexity results because many programs have joint outcomes. For example, a vocational-technical program may contribute to student knowledge and skill development in addition to producing various services to members of the business community.

A third major difficulty is that most planners and decision makers simply have a hard time translating their goals into specific objectives stated in measurable outcome terms. Traditionally, goal setting is one of the first steps in the planning process; however, once the goals are stated, too often they remain in general, nonoperational terms. Because the goals lack translation into specific, measurable descriptions, planners and decision makers have trouble utilizing them in selecting the optimal, or even promising, courses of action and in evaluating the implemented programs.

A fourth major difficulty is that the time span over which budgets are projected severely limits higher education's ability to assess the "educational value added" to students and society. In fact, it would seem that the entire state planning and budgeting process is geared more toward preventing this type of assessment than to encourage it. As State Senator Robert Graham of Florida (1975) so aptly put it:

> By appropriating either annual or bi-annual budgets, as all fifty states do, every decision making level is able to 'keep its options open' in the hopes that it will win approval the next time around. At the same time there are enough instances of reversals of previous commitments that no decision maker ever feels completely confident in proceeding with full program implementation. Instead, part of his resources must be preserved for the next annual budget fight.

One outgrowth of all these problems is that the collection and use of outcome information is often torn by the fear of potential misuses. One aspect of this fear is that the data will not portray an accurate picture of the actual results and benefits derived from an institution and its programs. A second and perhaps more basic concern, especially on the part of institutional administrators and faculty, is the uncertainty about the ultimate findings and the actions that will be taken by persons in positions of control. This latter concern is based on the fear that the evaluation process will not adequately take into account those outcomes and benefits that are not quantifiable and those inputs and goals that are unique to a given institutional program.

A second outgrowth is the concern about how information should be presented for purposes of program evaluation and budget review. As State Senator Larry Borst of Indiana noted at a Legis 50 (nee Citizens Conference for State Legislators) Seminar last summer, "the situation that we in the legislature often encounter is one that follows the 'dump-truck theory'." That is, the legislature is provided tons and tons of data, but considerably less useable information. The problem, on the one hand, is the failure of the legislature to articulate clearly the precise information it needs, and, on the other hand, is the institutions' fear that their situation will be misunderstood unless all the information about their situation is provided.

Final Comments

The intent of this paper was to provide an overview of current practices and the problems that exist concerning the collection and use of higher education performance or outcome information for state-level planning and budgeting. The potential impact of the use of outcome information in the planning and budgeting has major implications for creating new incentives and developing an environment for more effective use of resources and for improved educational programs that meet the needs of students and society. My major concern is that decision makers at the institutional and state levels join together in charting a positive and reasonable course of action that will help achieve those educational outcomes that are valued by all of us. I hope that in this seminar we can begin getting together and start identifying what actions need to be taken in both the short-range as well as the long-range future.

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